

CLAIMS

1. A book binding apparatus for binding a stack of sheets, said apparatus comprising:
 - 5 a first cover element including
 - a first cover section having dimensions the generally correspond to dimensions of the sheets;
 - a first section of pressure sensitive adhesive disposed along a first edge of the first cover section;
 - 10 a first release liner disposed over the first section of pressure sensitive adhesive;
 - a flap member attached to the first cover section and movable between a closed position where the flap member is disposed over at least a portion of said first release liner and an open position where the flap
 - 15 member is positioned away for said first release liner;
 - a second section of pressure sensitive adhesive disposed on a surface of said flap member facing said first release liner; and
 - a second release liner disposed over said second section of pressure sensitive adhesive.
2. The book binding apparatus of Claim 1 further including:
 - a second cover element comprising
 - 25 a second cover section having dimensions that generally correspond to dimensions of the sheets; and
 - an elongated spine element having a longitudinal first edge attached to an edge of the second cover section and a longitudinal second edge to be secured by the first section of pressure sensitive adhesive of the first cover section, with the
 - 30 spine element including a substrate and an adhesive matrix of heat activated adhesive disposed on the substrate.

3. The book binding apparatus of Claim 2 wherein the adhesive matrix defines a multiplicity of spaced apart longitudinal grooves that facilitate folding of the spine element.

5 4. A method of binding a stack of sheets comprising;
 providing a first cover element which includes a first cover section
 and an elongated spine element having a first longitudinal edge attached to an
 edge of the first cover section, with the spine element including a temperature
 activated adhesive matrix;
10 providing a second cover element which includes a second cover
 section;
 positioning the stack of sheets intermediate the first and second
 cover sections;
 folding the binder element around an edge of the stack of sheets
15 so that the adhesive matrix is facing an edge of the stack of sheets;
 subsequent to the folding, securing the spine element to the
 second cover section; and
 subsequent to said securing, applying heat to the spine element
 so that molten heat activated adhesive contacts the edge of the stack.

20 5. The method of Claim 4 wherein the securing is carried out
 using pressure sensitive adhesive.

 6. The method of Claim 5 wherein the second cover element
25 includes a first segment of pressure activated adhesive covered by a first
 release liner and wherein the method further includes removing the first
 release liner and the securing includes pressing spine element against
 the first segment of pressure activated adhesive.

30 7. The method of Claim 6 wherein the second cover element
 includes a flap member attached to the second cover section movable
 between an open and a closed position and, subsequent to the pressing,

moving the flap member to the closed position so as to cover at least a portion of the spine element.

5 8. The method of Claim 7 wherein a second segment of pressure sensitive adhesive is disposed on an inner surface of the flap member wherein the moving of the flap member to the closed position causes the flap member to be secured to the at least a portion of the spine element.

10 9. The method of Claim 8 wherein a second release liner is disposed over the second segment of pressure sensitive adhesive and wherein, prior to the moving the flap member to the closed position, removing the second release liner so as to expose the second segment of the pressure sensitive adhesive.

15 10. The method of Claim 4 further including:
 subsequent to the applying heat, permitting the molten heat activated adhesive to cool so as to produce a bound stack;
 providing a hardcover assembly including first and second relatively rigid
20 hardcover sections separated by a spine segment, with the first hardcover section including a first pressure sensitive adhesive layer;
 exposing only a first portion of the first pressure sensitive adhesive layer;
 positioning the bound stack and the first hardcover section so
25 that the bound stack comes in contact with the exposed first portion of the first pressure sensitive adhesive layer;
 exposing a second portion of the first pressure sensitive adhesive layer; and
 bringing the bound stack and the second portion of the first
30 pressure sensitive adhesive layer into contact with one another.

11. The method of Claim 10 wherein the second hardcover section of the hardcover assembly further includes a second pressure sensitive adhesive layer and wherein the method further includes:

5 exposing only a first portion of the second pressure sensitive adhesive layer;

positioning the bound stack and the second hardcover section so that the bound stack comes in contact with the exposed first portion of the second pressure sensitive adhesive layer;

10 exposing a second portion of the second pressure sensitive adhesive layer; and

bringing the bound stack and the second portion of the second pressure sensitive adhesive layer into contact with one another.

12. The method of Claim 5 the elongated spine element includes a
15 segment of pressure activated adhesive disposed along a second longitudinal edge of the spine element covered by a release liner and wherein the method further includes removing the release liner and the securing includes pressing the spine element against the second cover section.

20 13. The method of Claim 12 further including:

subsequent to the applying heat, permitting the molten heat activated adhesive to cool so as to produce a bound stack;

25 providing a hardcover assembly including first and second relatively rigid hardcover sections separated by a spine segment, with the first hardcover section including a first pressure sensitive adhesive layer;

exposing only a first portion of the first pressure sensitive adhesive layer;

30 positioning the bound stack and the first hardcover section so that the bound stack comes in contact with the exposed first portion of the first pressure sensitive adhesive layer;

exposing a second portion of the first pressure sensitive adhesive layer; and

bringing the bound stack and the second portion of the first pressure sensitive adhesive layer into contact with one another.

14. The method of Claim 13 wherein the second hardcover section of
5 the hardcover assembly further includes a second pressure sensitive adhesive layer and wherein the method further includes:

exposing only a first portion of the second pressure sensitive adhesive layer;

positioning the bound stack and the second hardcover section so that
10 the bound stack comes in contact with the exposed first portion of the second pressure sensitive adhesive layer;

exposing a second portion of the second pressure sensitive adhesive layer; and

bringing the bound stack and the second portion of the second pressure
15 sensitive adhesive layer into contact with one another.

15. A book binding apparatus for binding a stack of sheets, said apparatus comprising:

a first cover element including

20 a folded sheet, with half the folded sheet forming a first cover section having dimensions that generally correspond to dimensions of the sheets of the stack of sheets; and

an elongated spine element having a longitudinal first edge attached to the first cover section adjacent a fold in the folded
25 sheet, with the spine element including a substrate and an adhesive matrix of heat activated adhesive disposed on the substrate.

16. The book binding apparatus of Claim 12 wherein the adhesive
30 matrix defines a multiplicity of spaced apart longitudinal grooves that facilitate folding of the spine element.

17. The book binding apparatus of Claim 16 wherein the elongated spine element further includes a pressure sensitive adhesive disposed along a longitudinal second edge of the spine element and a release liner disposed over the pressure sensitive adhesive.

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18. A book binding apparatus for binding a stack of sheets, said apparatus comprising:

a cover section having dimensions that generally correspond to dimensions of the sheets;

10 an elongated spine element having a longitudinal first edge attached to a first edge of the first cover section, with the spine element including a substrate and an adhesive matrix of heat activated adhesive disposed on the substrate; and

15 a securing element attached to a second edge of the elongated spine element, opposite the first edge of the elongated spine element, said securing element including a layer of pressure sensitive adhesive and a release liner disposed over the layer of pressure sensitive adhesive.

19. A method of binding a stack of sheets comprising;

20 providing a first cover element that includes a cover section having dimensions that generally correspond to dimensions of the sheets and an elongated spine element having a longitudinal first edge attached to a first edge of the cover section, with the spine element including a substrate and an adhesive matrix of heat activated adhesive disposed on the substrate;

25 positioning the first cover element and the stack of sheets such that the cover section is disposed adjacent a first side of the stack of sheets;

folding the spine element around an edge of the stack of sheets so that the adhesive matrix is facing the edge of the stack;

30 subsequent to the folding, securing a second longitudinal edge of the spine element, opposite the first longitudinal edge; and

subsequent to the folding, applying heat to the spine element so that molten heat activated adhesive contacts the edge of the stack.

20. The method of Claim 19 wherein the securing is carried out using a pressure sensitive adhesive.

21. The method of Claim 20 wherein the pressure sensitive adhesive is disposed on the first cover element

5 22. The method of Claim 19 further including:
providing a second cover element which includes a second cover section;
prior to the folding, positioning the second cover element relative to the stack of sheets so that the second cover element is disposed opposite a
10 second side of the stack of sheets; and
wherein the securing causes that second longitudinal edge of the spine element to be secured to the second cover element.

23. The method of Claim 22 wherein the second cover element includes a pressure sensitive adhesive and a release liner disposed over the
15 pressure sensitive adhesive and wherein the securing includes removing the release liner and forcing the second longitudinal edge of the spine element and the pressure sensitive adhesive into contact with one another.

24. A book binding apparatus for binding a stack of sheets
20 comprising:
an elongated substrate having first and second edges;
a first folded cover sheet defining a fold separated by first and second cover sections, with each of the first and second cover sections having dimensions that generally correspond to those of the sheets, with the first
25 folded cover section being secured along the first edge of the substrate near fold of the first folded cover sheet by way of an adhesive;
a second folded cover sheet defining a fold separated by third and fourth cover sections, with each of the third and fourth cover sections having dimensions that generally correspond to those of the sheets, with the second
30 folded cover section being secured along the first edge of the substrate near fold of the second folded cover sheet by way of an adhesive; and

a layer of heat activated adhesive disposed on the elongated substrate in a region intermediate the first and second folded cover sheets and wherein the region is free of any of the sheets of the stack prior to binding of the stack.

- 5 25. The book binding apparatus of Claim 24 wherein elongated substrate is folded to form a U-shape so as to define first and second substantially parallel substrate sections separated by a third substrate section substantially normal to the first and second substrate sections, with the layer of heat activated adhesive being disposed at least over the third substrate section.

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26. A method of binding a stack of sheets comprising:
 providing a book binding apparatus which includes an elongated substrate, a first folded cover sheet secured to a first edge of the elongated substrate, a second folded cover sheet secured to a second edge of the
15 elongated cover sheet and a layer of heat activated adhesive disposed on the substrate intermediate the first and second folded cover sheets, with each of the folded cover sheets including a pair of cover sections each having dimensions that generally correspond to dimensions of the sheets;
 positioning the stack of sheets between the first and second folded
20 cover sheets intermediate the first and second folded cover sheets on the layer of heat activated adhesive;
 applying heat to the substrate so as to melt the heat activated adhesive;
 and
 permitting the adhesive to cool thereby producing a bound stack of
25 sheets.

27. The method of Claim 26 further comprising:
 providing a hardcover assembly including first and second relatively rigid hardcover sections separated by a spine segment, with the first hardcover section including a first pressure sensitive adhesive layer;
30 exposing only a first portion of the first pressure sensitive adhesive layer to produce a first exposed portion of the first pressure sensitive adhesive layer;

bringing a first one of the cover sections of the first folded cover sheet and the first exposed portion of the first pressure sensitive adhesive layer into contact with one another;

5 exposing a second portion of the first pressure sensitive adhesive layer so as to produce an exposed second portion of the first pressure sensitive adhesive layer; and

bringing the first one of the cover sections of the first folded cover sheet and the exposed second portion of the first layer of pressure sensitive adhesive layer into contact with one another.

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28. The method of Claim 27 wherein the second hardcover section of the hardcover assembly includes a second pressure sensitive adhesive layer and wherein the method further includes:

15 exposing only a first portion of the second pressure sensitive adhesive layer to produce a first exposed portion of the second pressure sensitive adhesive layer;

bringing a first one of the cover sections of the second folded cover sheet and the first exposed portion of the second pressure sensitive adhesive layer come into contact with one another;

20 exposing a second portion of the second pressure sensitive adhesive layer so as to produce an exposed second portion of the second pressure sensitive adhesive layer; and

bringing the first one of the cover sections of the second folded cover sheet and the exposed second portion of the second layer of pressure sensitive
25 adhesive layer into contact with one another.